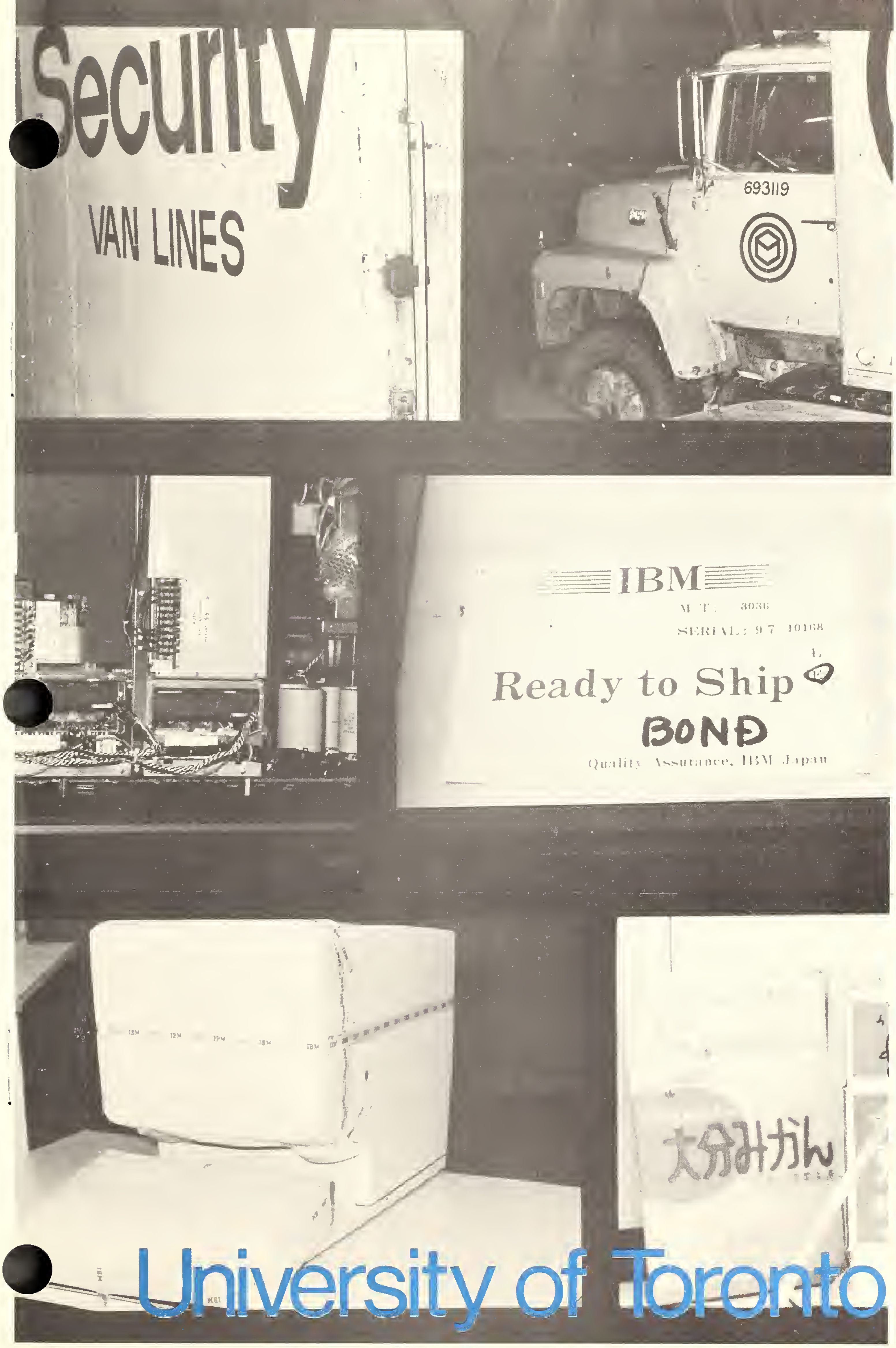

University of Toronto

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* * *

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Janet Barr, Editor

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As our users are well aware, the computing facilities at the University of Toronto have undergone extensive updating during the past months. The final stage of consolidation and hardware upgrading is now in progress.

An IBM 3031 Processor will soon replace the S/370-158-3 administrative facility. When this upgrade is accomplished, all of the major moves associated with consolidation for the present will have been completed. The machinery and software will be in place to offer members of the University of Toronto community powerful, state-of-the-art computing facilities.

While equipment and software are necessary, they alone do not constitute a complete service. There also needs to be a concerted effort to deliver these new facilities in forms which can be used by people with varying levels of computer skills and expertise. As computing becomes increasingly available to the general public and as attitudes towards computing change, we who provide computing must change our attitudes as well. It is no longer viable to think of computing as complex machines sequestered in centres to be used exclusively by a privileged few. While UTCC has always recognized the need to take computing to the user, we must continue to improve the channels through which we deliver usable computer based products. It is for this reason that an increased emphasis will be placed on the service aspect of computing at the University of Toronto. Symbolic of this awareness is a change in name for UTCC. UTCC recently received permission to change its name to University of Toronto COMPUTING SERVICES (UTCS). While a name change in and of itself means little, we hope that the change will indicate our awareness of the changing role of computing not only at the University, but in society as well.

During the next several months, UTCS users will see an increasing emphasis placed on service. Though specific details are still being worked out, there will be four primary service areas created, each with its own manager. A Faculty Liaison Officer will soon be selected. Recently a Search Committee of senior academic users was struck to select a suitable candidate.

cont'd...

The Liaison Officer's responsibilities will include determining and continuously monitoring the needs of the research and academic communities, ascertaining how well these needs are met by UTCS, and advising on major projects. Another position will be created to manage a group of people who will provide a total service link between users at our various geographical locations and the central computing facilities. This total service link will permit users to channel any interaction with UTCS through a customer representative at their own location. Interactions may range from accounting transactions to programming advice. A similar position will be created in the area of Administrative Services. A manager will be selected to head up a group which will be responsible for originating and developing UTCS services for our Administrative users. These include not only UTCS's established users - i.e. SRS, BIS, and their users - but also the faculty and departmental administrators. Finally, a group will be formed to provide product support. The role of this group will be to offer various forms of support to the user community. This support will cover a broad spectrum ranging from preparing and presenting courses and documentation to providing high level consultation and applications support. The overall purpose of this group will be to develop and support computer based products as well as to introduce new products to the University community.

The foregoing outline of our new approach toward service delivery and support has hopefully sparked questions and comments. I emphasize that we hope to make our approach as responsive to users' needs and evolutionary as possible. I encourage you to contribute to that evolutionary effort by making your comments known to me or to any of the services personnel listed in the directory at the end of this COMPUTERNEWS.

Dr. Doron J. Cohen
Director, UTCS

REPLACEMENT OF THE S/370-158-3 WITH THE IBM 3031 PROCESSOR

During the weekend of March 9, the third major event in the UTCS consolidation project will take place; that is, the move of administrative computing services from the S/370-158-3, currently located at 215 Huron Street, to the new IBM 3031 Processor which will be installed in the new machine room on the third floor of McLennan Laboratories. (See the article entitled STATUS REPORT ON 158/3031 CONVERSION for more details concerning this move.)

The conversion to the 3031 will provide a number of immediate benefits to the S/370-158-3 user community. First, the 3031 has approximately 10-15% more CPU power than the 158. This increased CPU power should mean improved response time and throughput. More importantly, the 3031 has 6 megabytes of main memory as compared to the 158's 4 megabytes. The additional megabytes of memory will alleviate the current memory shortage and should result in significantly improved response time during periods of heavy load (particularly for the TSO user). The new, higher speed disk drives being installed along with the 3031 will also contribute to better response time and throughput. In addition, due to the fact that the IBM hardware will be consolidated in one site, the 3033 can be used as a backup machine for critical batch applications in the event of an extended 3031 outage.

There are several longer term advantages to the 3031 conversion. First, the consolidated site will make it possible to share peripheral devices such as tape drives and printers between machines. This should prove helpful in reducing the bottlenecks which currently result from temporary shortages of these devices. The 3031 also has 6 I/O channels versus the 158's 4. Although the additional channels will not be used initially, they do provide increased I/O power which may be required in the future. Finally, unlike the 158, the 3031 comes with the additional hardware necessary to run the MVS "System Extensions" program product "built in". This will reduce the cost of running this performance enhancement software, should it become necessary.

Sean Keeley

STATUS REPORT ON 158/3031 CONVERSION

Over the past several months, UTCS has reported on the many equipment moves which have been made in an effort to consolidate the IBM - based services in the McLennan Physical Laboratories. During the weekend of March 9, the final stage of the consolidation project will take place; that is, the transfer of the administrative services from the S/370-158-3, currently located in 215 Huron Street, to the new IBM 3031 Processor which is being delivered to the consolidated site (for details concerning the new IBM 3031 Processor, refer to the article, REPLACEMENT OF THE S/370-158-3 WITH THE IBM 3031 PROCESSOR).

cont'd...

STATUS REPORT ON 158/3031 cont'd

The mechanics of the move are quite similar to those of our two previous conversions. (i.e. the conversion of the S/370-165-II services to the IBM 3033 Processor and the S/360-65 services to the S/370-165-II). As in previous cases, service will be suspended for one weekend for administrative users while the telecommunications facilities, peripheral hardware, magnetic media libraries and other materials are transferred to the McLennan Building. The commitment which UTCS has made is to complete the transfer of administrative computing services to the 3031 by Monday, March 12, at 0800 hours.

This time, much of the operational efforts have gone into co-ordination planning in order to ensure as trouble-free a service to the administrative groups as possible. Numerous meetings between co-ordinators from BIS (Business Information Systems), SRS (Student Record Services) and UTCS operations have been held to examine and modify, where necessary, all procedures involving the production services to these departments.

The two week period between the 3031 installation and the actual conversion of administrative computing services to the 3031 will be used to validate the hardware configuration and to allow UTCS and users to functionally validate the software. Other activities will include operational familiarization, some peripheral equipment movements, and benchmarking activities related to performance and pricing.

The end of March (when all systems are installed and running in the McLennan location) will mark the conclusion of UTCS's project to consolidate its IBM hardware - a project which UTCS began thinking about in 1975! It will certainly be a pleasure to report on the wrap-up next month.

Derry Cox

FURTHER PRICE ADJUSTMENT FOR 3033 SERVICES

UTCS is pleased to announce a further price adjustment for execution charges on the IBM 3033 Processor.

The existing 3033 pricing algorithm (refer to the article entitled NEW ACCOUNTING ALGORITHM AND RATE SCHEDULE FOR 3033/MVS in the December 78 issue of COMPUTERNEWS), which has been in place since December 12, has significantly reduced the overall cost of computing to our users. However, some anomalies were introduced by the memory charging algorithm which was changed from a quadratic to a linear function of memory size, and the I/O time from 24.5 milliseconds to 4.99 milliseconds. This change resulted in increased charges for some users who were using small memory sizes, large amounts of processing time, and little I/O.

cont'd...

FURTHER PRICE ADJUSTMENT cont'd

In order to correct this anomaly, the following changes, effective March 1st, will be made to the memory charging algorithm:

	OLD	NEW
Memory Charge	$5.30	$1.80
I/O time per I/O operation	4.99 ms.	15 ms.

The net effect of this change will further reduce the average execution cost for General Purpose Job Stream sessions by more than 10%, TSO costs by 15% and Class C costs by 62%. As a result of this change, no job will cost more than it did under the old algorithm. The benefit of this price reduction will depend on the ratio of I/O to CPU activity in your program; i.e. there will be a greater reduction in cost for programs showing a low I/O to CPU activity ratio (such as the typical Class C number crunching job) than for programs showing a high I/O to CPU activity ratio.

Rein Mikkor

CLASS E SERVICE UPDATE

In last month's issue of COMPUTERNEWS, the new Class E service was introduced. This service will be available soon on the IBM S/370-165-II computer and is designed to provide very low cost, execution-only computing for users with jobs requiring large amounts of CPU time. Work is currently progressing on the preparation of the Class E service and it is expected that Class E will be available in early April.

The proposed rate structure for Class E was described in last month's issue of COMPUTERNEWS in the article entitled NEW CLASS E SERVICE. As explained in that article, the charge incurred for equivalent runtime (CPU + I/O wait time) will be the greater of a set minimum charge and an amount calculated using the rate of $0.50 per minute. The minimum charge has been finalized and will be $15.

UTCS plans to provide support for Gould plotting on Class E. The exact manner in which Gould jobs will be run has not yet been decided. To assist us in this matter, users with Gould jobs which may be run under Class E in the future are asked to contact either Bob Chambers at 978-8823 or Herb Kugel at 978-7286. We are trying to determine the characteristics of the Gould plots that are generated. This information will be of assistance in setting up reliable, easy-to-use Gould procedures.

Bob Chambers

NEW 3330 DISK SERVICE/TERMINATION OF 2314 DISK SERVICE

UTCS wishes to announce that as of April, 1979, the service which enables users to rent 2314 disk packs, store foreign (user-owned) disk packs and mount these packs will be discontinued.

UTCS is pleased to announce a replacement rental service. The new service utilizes 3330-type disk packs with 100 Megabyte capacity. UTCS feels that users will find that this service provides more flexibility and is financially more attractive than the current 2314 service.

cont'd...

NEW 3033 DISK cont'd

The rental price for 3330 packs will be $15 per month with a minimum rental period of one month. For comparative purposes, should you rent a pack for a period of one year, your annual cost will be $180 compared to the $200 annual fee currently charged for a 2314 disk. Moreover, the capacity of 3330 packs is 100 Megabytes compared to the slightly less than 30 Megabytes on a 2314 pack i.e. slightly more than three times the capacity of 2314s. The charge for mounting a 3330 pack will be $3.25 - the same charge as the current 2314 charge.

The conversion to 3330 type packs has several technical advantages. The greatest benefit to the user results from the standardization of track size. Both online DASD and mountable DASD will now have a track length of 13030 bytes, which will allow the user complete flexibility in moving datasets between online and mountable DASD.

UTCS has already initiated a project to co-ordinate and assist in the conversion of 2314 disks to 3330 disks. Letters on this subject have been mailed to all 2314 disk holders informing them of this conversion project.

Please take note of the following important point. UTCS will not offer a 3330 storage service for foreign (user-owned) 3330 disk packs. Should there be any users who have further questions on this point, please feel free to contact Derry Cox (978-7092).

Concurrent with this change, the two SORT procedures which are used to mount 2314 scratch packs WORK01 and WORK02 will also be withdrawn and replaced by a procedure which uses a 3330 type 200 Megabyte disk. Please refer to the article in this edition of COMPUTERNEWS entitled UPGRADED SORT FACILITY for more information.

If there are any users who wish to discuss any aspects of the 2314 disk conversion or the new 3330 rental service, please feel free to contact Herb Kugel at 978-2286 or Derry Cox at 978-7092.

Derry Cox

UPGRADED SORT FACILITY

UTCS currently has two catalogued procedures available for sorts which involve a great deal of data and require large amounts of work space. These two procedures are SORTMNT1 and SORTMNT2. SORTMNT1 dedicates one 2314 disk pack (approximately 29 megabytes) for sort workspace while SORTMNT2 reserves two 2314 packs (approximately 58 megabytes).

In April, UTCS will upgrade the SORTMNT1 procedure replacing the single 2314 pack (WORK01) with a 3330 Model 11 pack (SCRA02). Compared to a 2314 which contains 200 cylinders with 20 tracks per cylinder and a block size of 7294 bytes per track, the 3330 Model 11 containing 808 cylinders, 19 tracks per cylinder and a block size of 13030 bytes per track, has a significantly larger capacity. In order to take advantage of this

cont'd...

UPGRADED SORT FACILITY cont'd

increased disk capacity, the SORTMNT1 procedure will be altered to provide a sort workspace of almost 100 megabytes. When the upgraded SORTMNT1 procedure is available, the SORTMNT2 procedure will no longer by required and should not be used.

As well as the 100 megabytes dedicated to sort workspace, an additional 100 megabytes is left available on the pack which allows the user to pass large temporary datasets between job steps.

To use the upgraded SORTMNT1 procedure, users should code the following JCL:

```
/*SETUP  UNIT=3330-1,VOL=EXT=SCRA02
// EXEC SORTMNT1
```

Note that with the exception of the /*SETUP statement, the JCL required to use the upgraded SORTMNT1 procedure is similar to the JCL currently coded by SORTMNT1 users.

Users who would like further information concerning the new SORTMNT1 procedure are asked to contact Herb Kugel, 978-7286.

Herb Kugel

P.U.T. ARISES

Perhaps the two busiest months of the year in terms of the load on the UTCS HSJS undergraduate terminals are March and April. Throughout these months, students are trying to complete their final computing assignments for the academic year. The two undergraduate terminals on the St. George campus (EUT and ASUT) are overcrowded during this period; the queues for the readers and printers are long, and finding an unused keypunch is difficult.

To alleviate this situation, UTCS, in co-operation with the Department of Physics, has installed a temporary HSJS terminal in Room 200 of the McLennan Labs. This terminal is equipped with an IBM 1403 high speed printer, an IBM 2501 card reader and a dozen keypunches. In addition, there is a work area in which students can study their output and in which an advisor can be found to provide programming assistance.

This terminal is in operation from March 5 to April 27. During this period, the terminal will be open from 8:00 a.m. to 10:00 p.m., Monday to Thursday and from 8:00 a.m. to 5:00 p.m. on Fridays. It is closed Saturdays and Sundays. An advisor is present between the hours of 10:00 a.m. and 7:00 p.m., Monday to Thursday and 10:00 a.m. and 5:00 p.m. on Fridays.

The room in which this terminal is housed previously served as a student lounge. During March and April, adequate study/lounge areas can be found close by in New College. In May this room will be transferred back into a lounge. We hope that this service, while displacing some students from their favourite lounge, will assist many students in their use of UTCS computing facilities.

Bob Chambers

TSO AND WYLBUR FETCH QUEUE OUTPUT

TSO and WYLBUR Fetch Queue users were recently asked to comment on the new UTCS policy of deleting output which had remained in the TSO/WYLBUR Fetch Queues for more than 24 hours. In response to user feedback, we have extended the original limit of 24 hours to one working day and have made the policy similar to that which is applied to unregistered datasets.

Effective March 1, 1979, all jobs which have been in the Fetch Queue for more than 24 hours (Saturdays, Sundays, and Holidays excepted) will be purged. These purges will take place between midnight and 6a.m. Monday to Friday. Thus, if a job finishes execution at 9a.m. on Monday, it will not be deleted until sometime early Wednesday morning. However, if a job finishes execution at 9a.m. on Friday, it will not be deleted until early the following Tuesday morning.

Mark Tapia

HSJS $INCLUDE LIBRARY

Course instructors and professors may add members to the HSJS $INCLUDE library by contacting their Computing Co-ordinator. All data must be in card image format and may be on actual cards or in an online dataset. Either data or source programs may be included in this library.

Members in this library may be accessed by PL/C, WATFIV, and SP/K users, by inserting a $INCLUDE card for that member in the deck. For example:

```
$INCLUDE X
```

will cause the contents of the member X to be included at that point. WATFIV users may incorporate main line programs by using this card. WATFIV will automatically fetch any other subroutines that the program invokes which are not contained within the user's source deck.

All members are added with an expiry date of 30-180 days. After the expiry date, UTCS may delete the member. If users wish to retain a member for a longer period, they should periodically submit a written request to the Computing Co-ordinator to extend the expiry date. Note that the default is 30 days.

Mark Tapia

ADVISING CARDS AT UTCS

Many users have noticed that time stamp cards are now being used at UTCS advising areas. The purpose of these cards is to measure UTCS's effectiveness in responding to users' questions and problems.

cont'd...

ADVISING CARDS AT UTCS cont'd

In order to gain an accurate indication of UTCS's responsiveness to its users' problems, each UTCS advisor is required to fill out one stamp card for each problem handled. The following outlines the steps involved in filling out the time stamp cards. The first step taken by an advisor when approached by a user requesting advice is to stamp the time on the top of the card. Next, the user's area of study, the nature of the user's problem, and the way in which the problem was resolved are filled in. (Note that in order to complete the card the user will be asked for his area of study. Users who phone in for advice will also be asked to supply this information.) Finally, once the session is completed, the advisor again stamps the time on the card, this time at the bottom of the card.

The time stamp cards are not being used to measure the performance of individual advisors. Rather, the cards are being used to detect the areas in which advising support is weak and requires improvement and to indicate which UTCS products are causing users the most problems. As such, it is hoped that the use of these time stamp card will lead to improved advising services at UTCS.

It should be noted that the time stamp cards will only be used for three months. After this three month trial period, the project will be evaluated in terms of usefulness and practicality.

Bob Chambers

DEC 10 HOURS OF SERVICE

The following summarizes the hours of service for the DECsystem-10.

Monday-Friday

0000-0100 hrs Reserved for system testing
0100-0700 hrs Normal service
0700-0900 hrs Reserved for preventative maintenance
0900-2200 hrs Normal service
2200-2400 hrs Reserved for system testing

Saturday, Sunday

0000-2400 hrs Unattended Operation

Note that on the second Wednesday of each month, an additional 2 hours will be reserved for preventative maintenance (that is, the system will be reserved from 0500 to 0900 hours for this purpose). Also note that from 0000 to 2400, Monday to Friday, the system will be attended by an operator.

Frequently, the DEC 10 is available to users during the periods reserved for preventative maintenance and system testing. Users will receive advance notification if the system will not be available.

During the periods in which the system is running unattended, the 3033 operator can be contacted at 978-7393 to report a system crash or to determine system status.

NON-CREDIT SHORT COURSES

Computerized Text Processing on the DEC 10

Prerequisites: None

Dates: (Note that this course will be offered twice)
April 16,17,18,19,20
May 14,15,16,17,18

Time: 10:00 - 12:00 a.m.

Location: 11 King's College Rd.,
Engineering Annex,
Room 107A

The text processing system in use at UTCS consists of the SOS text editor and the RUNOFF text formatter which run on the DECsystem-10 computer. The purpose of this course is to introduce and explain the basic capabilities and use of UTCS's text processing system. It is important to note that in order to participate in class demonstrations, a DEC 10 PPN (SAC) will be required.

Users interested in enrolling in this course are asked to contact Ms. Bernie Ogino, 978-4548.

APL79 - REGISTER NOW!

As mentioned in the October 78 issue of COMPUTERNEWS, the APL79 conference sponsored by ACM SIGPLAN Technical Committee on APL will be held in Rochester, New York, from May 30 to June 1, 1979.

At this year's APL conference, contributed papers covering a wide range of topics will be presented. Additionally, nine invited papers will be presented. Invited speakers include E.F. Codd, A.D. Falkoff, D.L. Orth, T. More, and K.E. Iverson from IBM, A.J. Perlis from Yale University, and J. Moses, V.R. Pratt, and G.J. Sussman from M.I.T.

One of the high points of the conference will be a banquet with guest speaker Professor Frederick P. Brooks, Jr., one of the designers and implementors of the IBM System/360 line of computers. The topic of Dr. Brooks banquet speech is "A Sideways View of APL".

Conference organizers anticipate a large turnout and, as such, recommend early registration. Registration materials can be obtained by writing:

Ms. Lynne C. Shaw,
APL79 Registration Chairman,
P.O. Box 40004,
Rochester, N.Y. 14604

Ernst Goetze

ACM SIGUCC USER SERVICES CONFERENCE VII

The 7th ACM SIGUCC user services conference will be held in Los Angeles, California, from September 30 to October 3, 1979. This year's conference will focus on the problems facing university

cont'd...

ACM SIGUCC USER SERVICES cont'd

computing centers and user services as a result of the rapidly changing computing environment. Changes in both computer technology and computer applications affect the user community and its expectations. What new technologies should be available to the user community? What new technologies should the computing centre, itself, be taking advantage of? This conference will provide an opportunity to discuss these problems and share ideas and expertise through workshops, panels, presentations, and, possibly, a vendor display.

Currently, the Program committee is calling for papers. Those interested should note that papers will be selected from abstracts which must be submitted by March 31, 1979 to either:

Carolyn Autrey-Hunley
SCIP - User Services
Stanford University
Stanford, California 94305
(415) 497-4886

or

Carol Macera
Computing Services
259 Evans Hall
University of California-Berkeley
Berkeley, California 94720
(415) 642-6415

Note that abstracts must be a minimum of 500 words in length.

Notification of preliminary acceptance will be sent by April 30, 1979.

PERSONNEL NON-CHANGES

COMPUTERNEWS has traditionally carried an article each month describing personnel changes within our organization. On this occasion, however, I would like to take the opportunity to acknowledge several people within Operations who have not left us - more precisely they have reached ten years of service at the University of Toronto. Therefore, congratulations for jobs well done to: Nancy Okada, Paul Scarborough, Bruce Wildfong and Dave Wong. I would also like to acknowledge the same achievement by Marg Doherty and Herb Kugel of the Services Group, John Chapman of the Systems Group and Pete Young of the Systems Group (Pete also started out his employment with UTCS in Operations). Honourable mentions also go to Dave Hart, Janet Barr and Ljubisa Trkulja, all of whom are into their tenth year of service and will reach the full ten year mark later in 1979. (Again, all these people started off in Operations, and in the case of Ljubisa he is still with the Operations Group.)

Combined, the years which the above staff members have been with UTCS represent over a century of service. Thanks ladies and gentlemen!

Derry Cox

PERSONNEL CHANGES

Kathlyn De Guire is the new receptionist in the Management Office. Kathlyn recently completed a secretarial science course at George Brown College. Previous to this, Kathlyn gained extensive secretarial experience in St. Kitts.

Regina Milligan is a new programmer with Programming Services. She is a recent graduate of U of T (1978), and has already worked at UTCS as a part-time advisor at the Arts and Science terminal.

Thomas Milligan started early in January as a programmer with Information Systems Software. He is also a U of T graduate in Computer Science. Before joining UTCS, Thomas worked for the Ontario Medical Association's Laboratory Proficiency Testing Program.

Mederne Seto is a new keypunch operator with Data Entry. She is also a graduate of George Brown College, and has previously worked at UTCS as an OCAP trainee for six months.

Clara Pereira

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

ACM Symposium on Theory of Computing.
 Conference record. no. 9th (1977)

Advances in information systems science.
 v.7 (1978)

Annual review in automatic programming.
 v.8 (1977)

Bell System Technical Journal.
 UNIX time-sharing system.
Murray Hill, N.J., AT & T, 1978.

Cypser, R.J.
 Communications architecture for distributed systems.
Reading, Mass., Addison-Wesley, 1978

Donahue, James Edward.
 Complementary definitions of programming language semantics.
Berlin, Springer-Verlag, 1976.

International Institute of Administrative Sciences. Working Group on Informatics and Administration.
 Informatics and administration.
Brussels, I.I.A.S., 1977.

Minieka, Edward.
 Optimization algorithms for networks and graphs.
New York, M. Dekker, 1978.

Mosteller, Frederick and Tukey, J.W.
 Data analysis and regression: a second course in statistics.
Reading, Mass., Addison-Wesley, 1977.

Online Conference on Pragmatic Programming and Sensible Software, London, Feb. 1978.
 Pragmatic programming and sensible software. ed. by Gerald Weinberg.
Uxbridge, End., Online Conferences Ltd., 1978.

Tukey, John Wilder.
 Exploratory data analysis.
Reading, Mass., Addison-Wesley, 1977.

UTCS SYSTEMS

3033 PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 6 megabytes of memory
- MVS with JES2

SYSTEM/370 MODEL 165-II

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 4 megabytes of memory
- OS/MVT with APL and ATS

3031 PROCESSOR

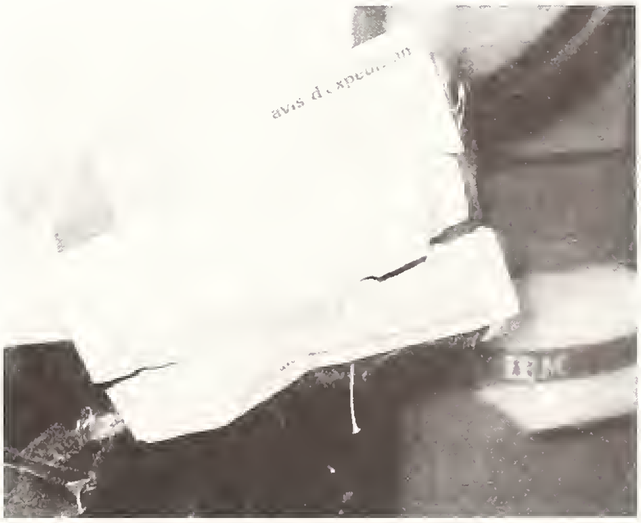
- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch and TSO services
- 6 megabytes of memory
- MVS with JES2

DECSYSTEM 1090

- provides General Purpose Time-Sharing
- 256k - 36 bit words of memory
- TOPS10 operating system

COMMUNICATIONS & SMALL SYSTEMS

- located in SF207/SF109/112
- DEC GT44 System with PDP-11/40 CPU
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and interactive graphics
- provides on-line and real-time computing services, data acquisition and minicomputer services



UTCS DIRECTORY

POSITION	ROOM	CENTREX PHONE NUMBER
DIRECTOR		
Dr. Doron Cohen	NP350	8948
ASSOCIATE DIRECTOR		
Rein Mikkor	NP350	5058
ASSOCIATE DIRECTOR		
Al Heyworth	NP350	4936
MANAGER, COMMUNICATIONS AND SMALL SYSTEMS		
Eugene Siciunas	NP350	4967
MANAGER, OPERATIONS		
Derry Cox	NP350	7092
MANAGER, SYSTEMS		
Sean Keeley	NP350	3579
TECHNICAL MANAGER		
Dennis Smith	NP350	4800
ASSISTANT TO THE DIRECTOR		
Suzan Fawcett	NP350	4428
INFORMATION & ACCOUNTING OFFICE		
General Inquiries	EA206	4990
Marg Doherty	EA206	8995
ACCOUNTS		
Merton Hunte	EA206	8702
Sylvia May	EA206	7148
ACCESS CODES		
Janet Howarth	EA206	8703
INFORMATION & CUSTOMER SERVICES		
Don Gibson	EA201	5568
SUPERVISOR, PROGRAMMING SERVICES		
Helen Peacock	SG201	6877
SUPERVISOR, APPLICATIONS		
Herb Kugel	SG304	7286

SUPERVISOR, CO-ORDINATORS

Ralph Lombardi	SG305	7130

COMPUTING CO-ORDINATORS

Engineering Annex Terminal		
Jill Reece	EA103A	4357
Program Advisors	EA103	
Time-Sharing Support		
TS Advisors	SG204	6465
Mark Tapia	SG204	7109
Erindale		
Paul Shindman		828-5311
Scarborough		
Ihor Prociuk		284-3173
Arts and Science		
Sue Chong	SS2133	6509
New Physics		
Bob Chambers	NP1203B	8823

SUPERVISORS, OPERATIONS

Paul Scarborough(S/370-3033)	NP335	6220
Kam Jain (S/360-65 & DEC 1090)	NP335	7374
Dave Wong (S/370-158)		6864

KEY:

EA = Engineering Annex
SG = 49 St. George
NP = McLennan Physical (New Physics)
SF = Sandford Fleming
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/3330,TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107

TIME-SHARING SERVICES	DIAL-UP
APL,ATS	7200 CENTREX 7201 NON CENTREX
TSO,WYLBUR	6200 CENTREX 6201 NON CENTREX
DEC	4224 CENTREX 4244 NON CENTREX
PHONE-IN ADVISING	6465

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